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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/888,732	06/25/2001	William A. Mittelstadt	56733USA5A.002	2092

7590 08/28/2002

Attention: Michael A. Hakamaki
Office of Intellectual Property Counsel
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EXAMINER

KOKABI, AZADEH

ART UNIT PAPER NUMBER

3751

DATE MAILED: 08/28/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

09/888,732

Applicant(s)

MITTELSTADT ET AL.

Examiner

Azy Kokabi

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 June 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Title

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Regarding claim 12, the standard, "stiffness to mass" ratio renders the claim indefinite because it is unclear what standard the stiffness and mass ratio is compared to.

Claim Rejections - 35 USC § 102 and 103

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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7. Claims 1,2, and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Young et al (USPN# 2,378,613). In regard to claim 1, Young discloses a unidirectional valve with a valve body (figure 1), a valve frame (figure 1), a valve opening (figure 1, #10), and a valve seat extending from the frame and partially surrounding the valve opening (figure 2). In addition, Young discloses a valve flap, which can be moved into two different positions. In the first position, its bottom or second portion contacts the seat and in the second position, the flap is spaced from the valve seat. (See Figure 2). Young also discloses that the valve flap has a nonuniform thickness (column 2, lines 16-20).

In regard to claim 2, Young discloses that the valve sides are of different thickness and formed in a concave-convex structure. (See column 2, lines 16-20 and figure 2). In regard to claim 4, the first end of the flap can be seen in figure 2, #16(top), which is greater in thickness than the second end (figure 2, #16 (bottom)).

8. Claims 1, 6-8, 13-16, 18-21 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Braun (USPN# 4,934,362). Braun discloses a unidirectional valve with a valve body (figure 1), a valve frame (figure 1), a valve opening (figure 2), and a valve seat extending from the frame and partially surrounding the valve opening (figure 2, #16). In addition, Braun discloses a valve flap, which can be moved into two different positions. In the first position, its bottom or second portion contacts the seat and in the second position, the flap is spaced from the valve seat. (See column 7, lines 3-8). Braun also discloses that the valve flap has a nonuniform thickness (column 1, lines 30-39).

In regard to claim 6, Braun discloses that the valve flap comprises of a top surface (figure 1), a bottom surface (figure 1) and ribs that extend from the top of the flap (Note column 1, lines

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30-39). In regard to claim 7, Braun discloses that ribs are used to provide for nonuniform thickness (column 1, line 34). In reference to claim 8, Braun teaches that several diametrically aligned ribs are placed on the valve flap (column 1, lines 33-34).

In re claim 13, Braun shows a planar valve flap (figure 3) and a nonplanar valve seat (figure 2). In regard to claim 14, see figure 2, reference #26. In re claim 15, Braun discloses that the valve is an exhalation valve (column 1, line 6-7). In reference to claim 16, Braun discloses that the valve may also be an inhalation valve (column 1, line 8).

In regard to claim 18, Braun discloses all the limitations as set forth in claim 1, in addition to a facemask that has an opening to receive a valve (figure 1, #10). In regard to claim 19, figure 1, reference #12 discloses that the facemask is formed of a filtering material. In reference to claim 20, Braun discloses that the valve is an exhalation valve (column 1, line 6-7). In regard to claim 21, Braun discloses that the valve may also be an inhalation valve (column 1, line 8).

9. In the alternative, claims 1,6-8, 13-16, 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over the claimed invention in Braun in view of the specification embodied in Braun (USPN# 4,934,362). In regard to claim 1, the claimed invention in Braun discloses a unidirectional valve with a valve body (figure 1), a valve frame (figure 1), a valve opening (figure 2), and a valve seat extending from the frame and partially surrounding the valve opening (figure 2, #16). In addition, Braun discloses a valve flap, which can be moved into two different positions. In the first position, its bottom or second portion contacts the seat and in the second position, the flap is spaced from the valve seat. (See column 7, lines 3-8). Braun's invention, however does not utilize a nonuniform flap. The specification regarding prior art in Braun

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disclose that a valve flap has nonuniform thickness due to the presence of ribs to provide less resistance when the flap is lifted (see column 1, lines 30-39). It would have been obvious to one of ordinary skill in the art to provide a device of Braun, as modified by the specification in Braun, in order to provide a functional valve with nonuniform thickness in order to provide a flap that may be lifted with less resistance and greater ease for the user.

In regard to claims 6-8, the claimed invention in Braun discloses all the limitations as set forth supra. The specification in Braun discloses the nonuniform thickness on the flap as discussed supra. In re claim 6, Braun also discloses that the valve flap comprises of a top surface (figure 1), a bottom surface (figure 1) and ribs that extend from the top of the flap (Note column 1, lines 30-39). In regard to claim 7, Braun discloses that ribs are used to provide for nonuniform thickness (column 1, line 34). In reference to claim 8, Braun teaches that several diametrically aligned ribs are placed on the valve flap (column 1, lines 33-34). It would have been obvious to one of ordinary skill in the art to provide a device of Braun, as modified by the specification in Braun, in order to provide a functional valve with at least one or a plurality of ribs on top of the flap in order to provide a flap that may be lifted with less resistance and greater ease for the user.

In regard to claim 13-16, and 18-21, the claimed invention in Braun discloses all the limitations as set forth supra. The specification in Braun discloses the nonuniform thickness of the flap as set forth supra. In addition, in regard to claim 13, Braun shows a planar valve flap (figure 3) and a nonplanar valve seat (figure 2). In regard to claim 14, see figure 2, #26. In re claim 15, Braun discloses that the valve is an exhalation valve (column 1, line 6-7). In reference to claim 16, Braun discloses that the valve may also be an inhalation valve (column 1, line 8). In

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regard to claim 18, Braun discloses all the limitations as set forth in claim 1, in addition to a facemask that has an opening to receive a valve (figure 1, #10). In regard to claim 19, figure 1, reference #12 discloses that the facemask is formed of a filtering material. In reference to claim 20, Braun discloses that the valve is an exhalation valve (column 1, line 6-7). In regard to claim 21, Braun discloses that the valve may also be an inhalation valve (column 1, line 8). It would have been obvious to one of ordinary skill in the art to provide a device as claimed in Braun, with useable features such as a facemask, filter, inhalation and exhalation valve, as modified by the specification embodied in Braun to provide a functional respirator with low resistance in the valve flap.

10. Claims 3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Young et al. Young discloses all the limitations of a unidirectional valve as shown supra. Young, however, does not specifically state the different dimensions between the nonuniform ends and sides of the valve flap. Young, however, does show there is a change in the size or thickness from the end and sides of the flap. It would have been obvious to one of ordinary skill in the art to provide a unidirectional valve of Young and modify the flap with a minimum of at least 10% thickness in order to provide a respirator valve with low resistance.

11. Claims 9-11 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Braun in view of Japuntich et al (USPN # 5,325,892). The claimed invention and the specification embodied in Braun disclose all the limitations as set forth supra. Braun, however does not disclose of a curved valve flap or a planar valve seat. Japuntich discloses of a curved valve flap (figure 1, #24) and a planar valve seat (figure 1, #26) that causes a bias to provide a seal between the flap and the seat (column 7, lines 38-41). It would have been obvious to one of ordinary skill

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in the art to provide a device of Braun, as modified by Japuntich, with a curved flap and a planar seat, in order to create a seal between the two parts.

In regard to claim 10, Japuntich discloses a curved valve flap that partially flattens at the bottom (figure 3, #24). It would have been obvious to one of ordinary skill in the art to provide a device of Braun, as modified by Japuntich, with a flattened curved flap, in order to ensure that the flap contacts the valve seat for an adequate seal between the two parts.

In regard to claim 11, Japuntich discloses a bias of the valve flap toward the valve seat using a seal ridge made of materials such as rubber (figure 3, #30 and column 7, lines 38-48). It would have been obvious to one of ordinary skill in the art to provide a device of Braun, as modified by Japuntich, with a rubber seal ridge, in order to provide sufficient seal between the flap and the seat.

In regard to claim 17, Japuntich discloses that the valve flap is pinned or removably attach to the frame (figure 1, #41). It would have been obvious to one of ordinary skill in the art to provide a device of Braun, as modified by Japuntich, with a removably attached flap, in order to provide for a easy method to clean the device.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Shigematsu et al, Harrison et al, Klinger, Scheremet et al, O'Day et al, Baldwin, and Japuntich et al are cited as general respirator valves with valve frame, opening, flap, and seat.

14. Claim 12 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Azy Kokabi whose telephone number is (703) 306-4154. The examiner can normally be reached on Monday- Friday, 8:00am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Huson can be reached on (703) 308-2580. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3588 for regular communications and (703) 305-3588 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0861.

AK
August 23, 2002


TIMOTHY L. MAUST
PRIMARY EXAMINER